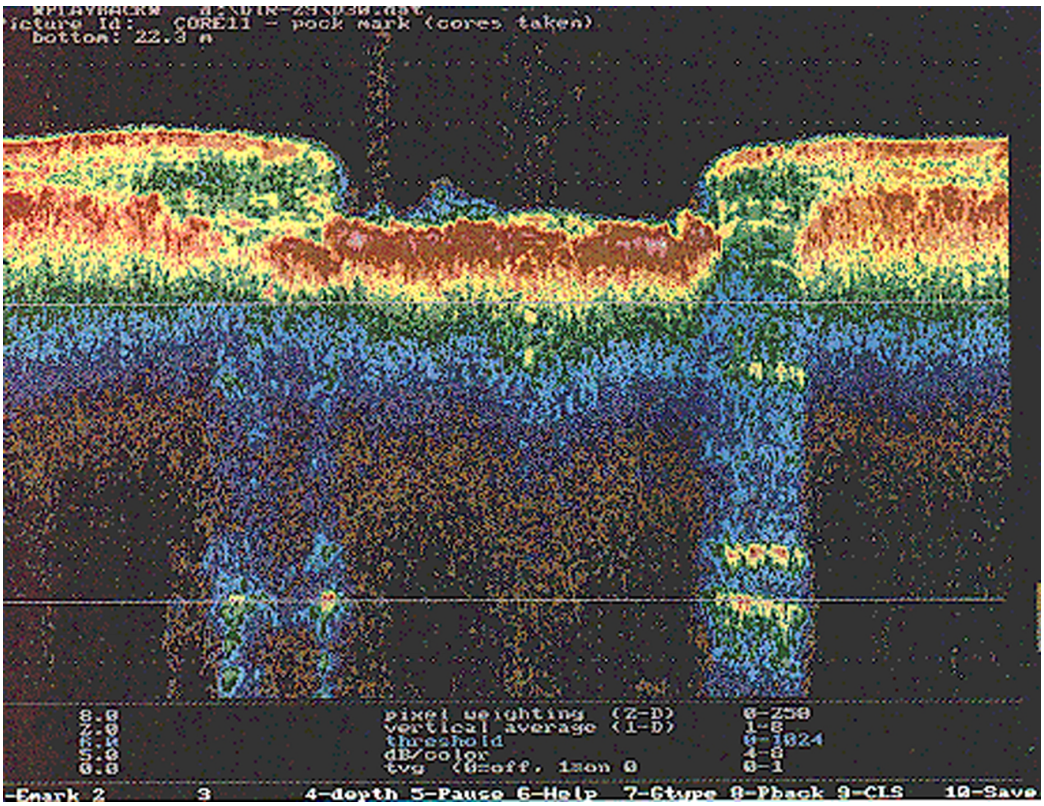
HIGH-RESOLUTION SEAFLOOR CLASSIFICATION SURVEY SYSTEM



As the highest resolution seismic system available, the automated seafloor classification system (ASCS) can remotely and accurately estimate and map sediment properties for many seafloor engineering applications. The ASCS can accurately predict, in near real time, sediment type and a number of selected geotechnical properties of the upper several meters of the seafloor while in an underway survey mode. This system functions as a flexible research data acquisition platform for collecting data. The record produced can be used to predict sediment structure and type, as well as such geotechnical properties as attenuation, density, porosity, shear strength, compressional and shear velocity, and mean grain size.

The ASCS software displays each of these sediment properties in near real time in the format above or as a scrolling tabular display of numerical values. The system also allows simultaneous collection of coregistered sidescan sonar data. This feature gives a three-dimensional look at the upper several meters of the seafloor. It can display the digitized acoustic return as a function of amplitude vs time. The system has an extremely robust system controller, data acquisition, data storage, and data processing hardware and software. The system transmits an acoustic pulse, digitizes the acoustic return to 16 bits, records the raw data
on a removable-media hard drive, and shows three different displays in near real time.

Applications of the ASCS include:

- Locating pipelines and other buried objects
- Data recording
- Industrial process monitoring
- Medical applications for anything that uses acoustical waveforms
- Recording any voltage regardless of the source.

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